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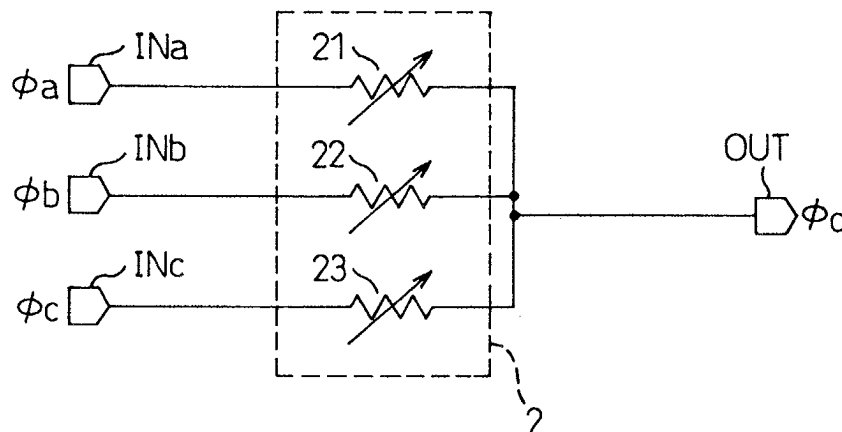
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(54) **Timing signal generating circuit**

(57) A timing signal generating circuit is disclosed which receives multi-phase input signals (Φ_a - Φ_c) and generates a signal (Φ_o) having a phase intermediate therebetween. Weighting is applied to the multi-phase

input signals by using a variable impedance circuit (2). The timing signal generating circuit (receiver circuit) can operate with a low supply voltage, is simple in configuration, and can generate timing signals with high accuracy.

Fig.7





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EUROPEAN SEARCH REPORT

Application Number
EP 03 25 0372

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 1 104 110 A (FUJITSU LIMITED) 30 May 2001 (2001-05-30) phase combining circuit with weight signal generating circuit and weighting circuit * paragraphs [0005], [0008], [0010], [0012] - [0015], [0043], [0075] - [0080], [0140] *	1-20	H04L7/033 H03K5/13
A	EP 0 884 732 A (FUJITSU LIMITED) 16 December 1998 (1998-12-16) phase interpolator for generating an output signal phase locked to an input signal * column 7, line 1 - line 20 * * column 8, line 11 - line 37 * * column 44, line 18 - line 42 *	1	
A	US 6 133 773 A (GARLEPP ET AL) 17 October 2000 (2000-10-17) * abstract *	1-20	
A	EP 1 128 559 A (TEXAS INSTRUMENTS INCORPORATED) 29 August 2001 (2001-08-29) * abstract *	1-20	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	JP 2001 217682 A (FUJITSU LTD) 10 August 2001 (2001-08-10) * abstract *	1-20	H04L H03K H03L
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 25, 12 April 2001 (2001-04-12) & JP 2001 217682 A (FUJITSU LTD), 10 August 2001 (2001-08-10) * abstract *	1-20	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 June 2005	Examiner Bernardini, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 25 0372

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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17-06-2005

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1104110	A	30-05-2001	JP 2001217682 A	10-08-2001
			JP 2002123332 A	26-04-2002
			EP 1104110 A2	30-05-2001
			EP 1538753 A1	08-06-2005
			TW 483255 B	11-04-2002

EP 0884732	A	16-12-1998	JP 11003587 A	06-01-1999
			JP 11275066 A	08-10-1999
			JP 11261408 A	24-09-1999
			EP 1489619 A2	22-12-2004
			EP 1492120 A2	29-12-2004
			EP 1492121 A2	29-12-2004
			EP 0884732 A2	16-12-1998
			TW 387065 B	11-04-2000
			US 6247138 B1	12-06-2001
			US 2003042957 A1	06-03-2003
			US 2001007136 A1	05-07-2001

US 6133773	A	17-10-2000	NONE	

EP 1128559	A	29-08-2001	GB 2362045 A	07-11-2001
			EP 1128559 A1	29-08-2001
			US 2002125960 A1	12-09-2002

JP 2001217682	A	10-08-2001	EP 1104110 A2	30-05-2001
			EP 1538753 A1	08-06-2005
			TW 483255 B	11-04-2002
